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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/785,157	02/25/2004	John G. Carman	15740.006	8150
7590		07/06/2007		
Mr. Fuller FENNEMORE CRAIG Suite 2600 3003 N. Central Avenue Phoenix, AZ 85012			EXAMINER ROBINSON, KEITH O NEAL	
			ART UNIT 1638	PAPER NUMBER
			MAIL DATE 07/06/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

<p align="center">Office Action Summary</p>	<p>Application No.</p> <p align="center">10/785,157</p>	<p>Applicant(s)</p> <p align="center">CARMAN, JOHN G.</p>	
	<p>Examiner</p> <p align="center">Keith O. Robinson, Ph.D.</p>	<p>Art Unit</p> <p align="center">1638</p>	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 April 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) 13, 14, 25 and 26 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 12, 15 and 17 is/are rejected.
- 7) ☒ Claim(s) 4-11, 16 and 18-24 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| <p>1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)</p> <p>2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)</p> <p>3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
 Paper No(s)/Mail Date _____.</p> | <p>4) <input type="checkbox"/> Interview Summary (PTO-413)
 Paper No(s)/Mail Date. _____.</p> <p>5) <input type="checkbox"/> Notice of Informal Patent Application</p> <p>6) <input type="checkbox"/> Other: _____.</p> |
|---|---|

DETAILED ACTION

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action mailed January 4, 2007 and the following **second non-final** Office Action is set forth. The amendment to claim 1 and the withdrawal of claims 13, 14, 25 and 26, filed April 4, 2007, have been received and entered in full.
2. Claims 1-12 and 15-24 are under examination.

Terminal Disclaimer

3. The terminal disclaimer filed on April 4, 2007 disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of U.S. Patent No. 6,750,376, June 15, 2004 has been reviewed and is accepted. The terminal disclaimer has been recorded and has overcome the double patenting rejection of claim 1 on pages 8-9 of the Office Action mailed January 4, 2007. The rejection has been withdrawn.

Response to Arguments

4. Applicant's arguments, see page 6, 2nd paragraph to page 9, end of 3rd paragraph of 'Remarks' filed April 4, 2007, have overcome the 35 USC 112, first paragraph rejection with regards to written description of claims 1-12 and 15-24 on pages 2-5 of the Office Action mailed January 4, 2007. The rejection has been withdrawn.
5. Applicant's arguments, see page 9, 4th paragraph to page 12, end of 1st full paragraph of 'Remarks' filed April 4, 2007, have overcome the 35 USC 112, first

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paragraph rejection with regards to enablement of claims 1-12 and 15-24 on pages 5-8 of the Office Action mailed January 4, 2007. The rejection has been withdrawn.

6. Applicant's terminal disclaimer, filed April 4, 2007 and approved April 17, 2007, has overcome the double patenting rejection of claim 1 on pages 8-9 of the Office Action mailed January 4, 2007. The rejection has been withdrawn.

New Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1, 2, 3, 12, 15 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lutts et al (Euphytica 78: 19-25, 1994), in view of Ogburia et al (Euphytica 88: 9-16, 1996), and in further view of Bashaw et al (Apomictic grasses, *In* Principles of cultivar development, Volume 2, pages 41-83, 1987).

The claims read on a method of producing an apomictic plant from sexual plants comprising identifying and selecting a first and second sexual plant from an angiospermous plant species, genus or family wherein the initiation time of embryo sac formation in the first plant occurs at about the same time as or before megasporogenesis in the second plant relative to the developmental maturity of the nongametophytic ovule and ovary tissues; hybridizing the first plant and second plant; recovering seed therefrom; sowing the seed; and selecting a hybrid plant that is apomictic.

Bashaw teaches that facultative apomictics have the capacity for both sexual and apomictic reproduction (see page 42, 2nd full paragraph) and Lutts et al teach that the cited apomictic plants used in the cross are facultative (see, for example, page 23, 2nd column, 2nd paragraph). Thus, the plants taught by Lutts et al are interpreted as sexual plants.

Lutts et al teach a method of producing an apomictic plant from sexual plants wherein a first plant and a second plant are hybridized, seed was recovered and sowed (to produce the F1 population and plants) and a hybrid plant is selected that is apomictic (see 'Materials and methods', page 20, 1st column, 1st paragraph to 2nd column, end of second full paragraph and Table 1).

Lutts et al do not teach identifying and selecting sexual plants from an angiospermous plant species, genus or family wherein the initiation time of embryo sac formation in the first plant occurs at about the same time as or before megasporogenesis in the second plant relative to the developmental maturity of the nongametophytic ovule and ovary tissues.

Ogburia et al teach embryo sac formation and detection of angiospermous plants (see 'Experimental protocols', page 10, 1st column).

With regards to claims 2 and 17, Lutts et al teach chromosome doubling (see page 20, 1st column, 2nd paragraph).

With regards to claim 12, Lutts et al teach plants selected from a family that exhibits apomixis in nature (see page 19, 1st column, 2nd paragraph).

It would have been *prima facie* obvious to one of ordinary skill in the art at the time of Applicant's invention to combine the teachings of Lutts et al with those of Ogburia et al.

One of ordinary skill in the art would have been motivated to combine these teachings because Lutts et al teach that apomictic hybrids could be utilized as pollen parents in backcrosses and some should be superior plants morphologically close to the female parent and express both hybrid vigor and apomictic reproduction (see page 19, 1st column, 2nd paragraph).

In addition, one of ordinary skill in the art would have reasonable expectation of success based on the success of Lutts et al in producing a method of producing an apomictic plant from sexual plants.

9. Claims 1, 2, 3, 12, 15 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bashaw (Apomixis in crop improvement. *In* Hybridization of crop plants. 1980. pages 45-63), in view of Dujardin et al (Euphytica 38: 229-235, 1988).

The claims read on a method of producing an apomictic plant from sexual plants comprising identifying and selecting a first and second sexual plant from an angiospermous plant species, genus or family wherein the initiation time of embryo sac formation in the first plant occurs at about the same time as or before megasporogenesis in the second plant relative to the developmental maturity of the nongametophytic ovule and ovary tissues; hybridizing the first plant and second plant; recovering seed therefrom; sowing the seed; and selecting a hybrid plant that is apomictic.

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With regards to claims 1, 12 and 15, Bashaw teaches a method of producing angiospermous apomictic plants comprising selecting sexual angiospermous plants, namely buffelgrass, hybridizing said plants, recovering hybrid seed, and selecting a hybrid plant that is apomictic to the apomictic parent plant (see page 59, Figure 3).

Bashaw does not teach chromosome doubling of apomictic plants.

With regards to claims 2, 3 and 17, Dujardin et al teach the chromosome doubling of apomictic plants (see page 234, Figure 3). In addition, Dujardin et al teaches that chromosome doubled plant "should [be] useful as a pollinator on tetraploid pearl millet to produce chromosome substitution lines for the purpose of developing apomictic pearl millet" (see page 234, 2nd column, lines 5-10).

It would have been *prima facie* obvious to one of ordinary skill in the art at the time of Applicant's invention to combine the above teachings to produce the claimed invention.

One of ordinary skill in the art would have been motivated to combine these teachings because Bashaw teaches "[a]pomictic plants generally are highly heterozygous and when the apomictic barrier is broken, there is abundant variability from which to select new types" (see page 57, 2nd paragraph).

In addition, one of ordinary skill in the art would have reasonable expectation of success based on the success of Bashaw in producing apomictic buffelgrass cultivars (see page 59, Figure 3).

Conclusion

10. Claims 1, 2, 3, 12, 15 and 17 are rejected.

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11. Claims 4-11, 16 and 18-24 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Keith O. Robinson, Ph.D. whose telephone number is (571) 272-2918. The examiner can normally be reached on 7:30 a.m. - 4:30 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anne Marie Grunberg can be reached on (571) 272-0975. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

13. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Keith O. Robinson, Ph.D.

**DAVID H. KRUSE, PH.D.
PRIMARY EXAMINER**

June 20, 2007

